Project Summary

US Army Engineer
Research and Development Center
Waterways Experiment Station

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R/V *Waterways Explorer*

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Objective: Serve as primary data acquisition platform for numerous research projects

Approach:

The fully equipped Research Vessel ***Waterways Explorer***, can be readily transported to project areas by trailer and serve as a floating laboratory for waterborne geophysical studies. Designed for river, reservoir, harbor and near shore study environments, the tri-pontoon design of this 32' by 12' vessel offers superior stability for conducting a broad spectrum of data acquisition activities. Specifications include the following:

- Vessel dimensions: length: 32' beam:12' draft 36"
- Twin 200hp marine outboard engines with full day fuel supply
- Trimble Differential Global Positioning System (DGPS) and Furuno Navigation Radar
- HyPack Survey and Navigation System
- 15' Swing-out tow arms (starboard and port)
- 2 through-the-deck and 2 side-mounted telescoping equipment deployment systems
- 17'x10' enclosed environmentally controlled instrumentation cabin (AC/DC power)

Geophysical Equipment

An extensive suite of equipment is available. All data acquisition systems are integrated with the vessel DGPS for real-time correlation of data and positioning information. The following in-house equipment is available:

- Datasonics CAP-6000 Chirp System
- Datasonics SBP-5000 Subbottom Profiler
- EG&G 260th/272d Side Scan Sonar System
- EG&G Boomer System
- EG&G 860 Magnetometer
- Additional systems available as required by project

Project Areas

The ***Explorer*** has served as the primary data acquisition platform for numerous research projects conducted by a joint team of engineers and scientists from the ERDC Geotechnical and Coastal and Hydraulics Laboratories. Past projects include:

- Delaware Bay and ship channel project, DE/NJ (over 300 survey miles of subbottom characterization for dredging planning and beach sand borrow site locations) [WES Technical Report (TR) HL-96-9]
- Upper Mississippi River at Locks and Dams 20, 22, and 24 (top of rock study) [WES TR GL-96-11]

- Clinch River, TN (subbottom sediment characterization and side scan sonar study)
- Chesapeake Bay, MD (define subbottom stratigraphy and paleo-channels)
- Charleston Harbor and Ship Channel, SC (subbottom sediment characterization for dredging planning and side scan sonar/ magnetometer cultural resources study
- Monongahela River, PA (subbottom sediment characterization and side scan sonar for dredging study) [WES Miscellaneous Paper (MP) GL-96-18]
- Newport News Creek, VA (locating buried rock mattress and bottom sediment characterization)
- Lower Bay, New York Harbor, NY (side scan sonar mosaic for siting of dredged material disposal pits)
- Newark Bay (subbottom sediment characterization and top of rock study) [WES MP GL-97-10]
- L Lake, Savannah River Plant (side scan sonar survey to locate buried pits) [WES TR GL-97-17]
- Pine Flat Lake, CA (subbottom rock and sediment characterization)

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